REMARKS

Applicants certainly appreciate the indication of allowance of claims 16, 17, 19, 27-32 and 34 if amended to become independent, incorporating the requirements of the base claim and any intervening claims. Applicants have amended claims 17, 31 and 32 to become independent as suggested. Please charge the fee for the additional independent claims to Baker Hughes Incorporated deposit account 02-0429. Applicants have amended the rejected independent claims to better define the invention. Applicants respectfully traverse the rejection of the non-allowed claims over the cited art.

All of the claims require rolling a metal plate around an elastomeric jacket to form a tubing with a seam, welding the seam, then swaging the tubing. Wilkenloh deals with a coaxial cable that has a single inner conductor 22 and a single outer conductor 21 that comprises a metal tube. Conductor 22 has an insulation layer 23, and a jacket of expanded or foam dielectric surrounds layer 23. Outer conductor 21 does not have a welded seam. Rather it is threaded over the previously manufactured cable core. Outer conductor 21 is swaged after it is installed over the foamed dielectric layer, but in the example illustrated, it is swaged only about 0.020".

Sizer discloses a cable having a plurality of conductors embedded within an elastomeric jacket, the jacket being surrounded by a metal tube. In all of the embodiments, except Figure 7, the tube is formed by bending a plate around the cable core and welding a seam. In Figure 7, the cable core is inserted into preformed non seam-welded tubing by pulling or pumping (Col 8, lines 14-16). Sizer discloses a number of embodiments for causing the jacket to frictionally grip the inner diameter of the tubing. In some embodiments, the jacket or filler layer 16 is of a rubber material that swells upon contact with oil or upon heating (column 5, lines 14-27). In Figure 9, a flow channel is provided where oil can be pumped between the filler material and the tubing. Figures 2 and 4 disclose protrusions on the inner diameter of the tube for gripping the filler

material. Figures 6 and 6A disclose sleeves made of metal that are bonded to filler material 108 by epoxy 118. Sleeves 110 are welded to the inside surface of strip stock 112 during welding of the seam. In Figure 7, bands 124 of metal are bonded to the cable core 120 prior to insertion into the preformed reeled tubing and crimped at 128 to cause the metal bands to frictionally engage the cable core.

Sizer does not suggest of swaging of any of the embodiments. The only embodiment that involves deforming the outer tubing is the embodiment of Figure 7, which is the embodiment that does not have a welded seam. That embodiment does not swage, rather crimps the outer tubing to deform an inner metal band against the jacket. Applicants submit that it would not be obvious to one of average skill in the art to swage the seam-welded tubing of Sizer in view of Wilkenloh. Wilkenloh deals with coaxial cable, which has a single conductor within and an outer conductor that is threaded over the cable core. Wilkenloh discloses swaging tubing that is not seam-welded, and Sizer discloses crimping tubing that is not seam-welded. Neither reference discloses swaging seam-welded metal tubing..

Applicants submit that it is not clear from these references that swaging a seam-welded tube is feasible. It is known that a weld changes the metallurgy of a component, generally making the weld area more brittle. One would not recognize that seam-welded tubing could be swaged from these references. Both references teach deforming non seam weld tubing, one by swaging and the other by crimping. All of the embodiments of Sizer using seam-welded tubing rely upon barbs, protrusions and/or expansion of the filler material jacket in order to create friction between the jacket and the tube. There is no motivation to combine Wilkenloh's swaging of non seam-welded tubing with Sizer's embodiments dealing with seam-welded tubing because there is no indication that such would be successful. One skilled in the art reading Sizer and

Wilkenloh would not realize that seam-welded tubing could be successfully swaged to create friction between the cable core and the tubing.

As mentioned, claim 1 requires rolling a metal plate around an elastomeric jacket to form a cylindrical tubing having a seam, then welding the seam, then swaging the tubing. Wilkenloh does not suggest seam welding the outer conductor. Applicants submit that one viewing Wilkenloh and Sizer would not be motivated to swage a seam-welded tube to cause friction between the elastomeric jacket and the tubing. Rather, one would be led to the use of thermal or heat swelling of the jacket, protrusions on the inner diameter of the tubing as in Figure 4, or bonded sleeves as in Figure 6A.

In addition to the requirements mentioned above, claim 1 requires assembling three insulated conductors in contact with each other and extruding a jacket of an unexpanded elastomeric material over the insulated conductors. Wilkenloh teaches coaxial cable with a single inner conductor and a single outer conductor. Moreover, Wilkenloh teaches expanded or foamed elastomeric material over the insulated conductor.

Claim 18 requires extruding a jacket over a plurality of insulated conductors and providing the jacket with a cylindrical exterior having a plurality of longitudinally extending grooves. Grooves 23 are illustrated in Figures 1 and 2. The grooves provide room for the unexpanded elastomeric material to deform against the inner diameter of the tubing 27, as illustrated in Figure 5. Being of an unexpanded elastomeric material, the jacket is not compressible, even though it is deformable. As set forth in claim 18, the groves accommodate portions of the deformed material of the jacket. Wilkenloh does not disclose grooves, and applicants submit it would not need grooves because Wilkenloh's insulation is expanded foam material, which is compressible. Sizer does not disclose grooves in the exterior of the

elastomeric jacket because Sizer teaches to swell the jacket in response to oil or heat, and/or to utilize protrusions. Moreover, as discussed above, applicants submit that there is no motivation from Wilkenloh or Sizer to swage a seam-welded tube.

Claim 21 also requires seam-welding tubing around the jacket, then swaging the tubing to a lesser diameter. It is respectfully submitted that the claims are now in condition for allowance and favorable action is respectfully requested.

Respectfully submitted,

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